REMARKS

This is a Response to the Office Action mailed November 17, 2008, in which a three (3) month Shortened Statutory Period for Response has been set, due to expire February 17, 2009. Twenty-nine (29) claims, including four (4) independent claims, were paid for in the application. Claims 43, 47-49, 52-58, 60, and 61 have been canceled. Claims 40-42, 44-46, 50, 51, 59, and 62-64 have been amended. No new matter has been added to the application. No fee for additional claims is due by way of this Amendment. The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090. Claims 40-42, 44-46, 50, 51, 59, and 62-64 are pending.

Discussion of the claims and cited references

The Office Action has rejected claims 40, 44-46, 50-54, 58, and 60-62 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,026,818 issued to Blair (hereafter Blair) in view of U.S. Patent No. 6,359,562 issued to Rubin (hereinafter Rubin '562). Claims 43, 49 and 57 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Blair in view of Rubin '562 and further in view of U.S. Patent No. 6,696,954 issued to Chung (hereinafter Chung).

Blair is directed to a resonant tag and detection device. Blair, title. The resonant tag may be attached to an object, such as a surgical object (*e.g.*, implement, sponge), to allow the detection device to detect a presence or absence of the resonant tag and hence the surgical object to which the resonant tag is attached. Such may advantageously prevent objects used during surgery from mistakenly being left in a body cavity of a patient.

The detection device emits pulsed emissions of *wide band* transmission signals (*i.e.*, interrogation signals) to excite the resonant tag into resonance. In response, the resonant tag emits a small response signal (*i.e.*, ring back), of a generally but *not* specifically known frequency. Blair, col. 5, lines 1-4. Emitting the response signal is sometimes termed backscatter. Use of a pulsed interrogation signal allows the resonant tag to accumulate more energy through several pulses before ring back occurs than would otherwise be possible. Blair, col. 6, lines 3-7. Such advantageously extends ring back duration and thereby effectively increases the range of detection to levels usable in a surgical environment. Blair, col. 6, lines 3-

7. Wide band interrogation signals allow the use of inexpensive tags, since the center frequency of the resonant tag is not required to be within a close tolerance of some nominal value. Blair, col. 5, line 65-col. 6, line 3. Further, wide band interrogation signals advantageously provide a relatively fast decay of the interrogation signal once the transmitter is turned off or otherwise stops transmitting. Blair, col. 5, lines 15-20, col. 6, lines 56-59. The pulse signal frequency may be moved around in a random fashion. Blair, col. 8, lines 12-19.

In response to the pulsed interrogation signals, the resonant tag transmits an image signal of its resonance decay via magnetic coupling. Blair, col. 6, lines 8-10. Importantly, the response signal increases in a *very* narrow band. Blair, col. 5, lines 7-12. Such a response signal would normally *not* be readily detectable due to the weakness and non-predetermined frequency of the response signal. Blair, col. 5, lines 1-4. The relatively fast decay of the interrogation signal which results from the use of a *wideband* interrogation signal *quickly* reduces noise that would otherwise mask the response signal from the resonant tag, which is extremely weak relative to the interrogation signal emitted by the transmitter. Blair, col. 5, lines 15-20, col. 6, lines 56-59.

The detection device employs return signal averaging to detect the return signals through the noise. Blair, col. 6, lines 19-20. In particular, Blair relies on the fact that noise tends to add as the square root, while signal adds directly. Blair, col. 6, lines 20-26. Thus the addition of multiple return signals creates an enhanced single narrowband signal that is visible through the noise. Blair, col. 6, lines 20-26.

Rubin is directed to electronic article security (EAS) systems such as those used to prevent theft. Rubin, col. 1, lines 14-22. Such systems are typically located at the exits of a retail store or warehouse. Rubin, col. 1, lines 27-29. Such systems transmit electromagnetic energy into a detection zone to create an electromagnetic field and detect a *disturbance of the electromagnetic field* when an article or package marked with a resonant circuit passes through the detection zone. Rubin, col. 1, lines 24-47 (emphasis added).

In particular, Rubin discloses three embodiments. A first embodiment, illustrated in Figure 1, is a test system configured for measuring the electrical characteristics of resonant circuit or resonant security tag. Rubin, col. 3, lines 37-42. A second embodiment, illustrated in Figure 3, is an EAS system for detecting the presence of a resonant security tag within a

detection zone. Rubin, col. 8, lines 1-4. A third embodiment, also illustrated in Figure 3, is an apparatus for deactivating a security tag. Rubin, col. 9, lines 21-24.

The test system for use in testing security tags with resonant circuits during manufacture or production is discussed at Rubin col. 3, line 37-col. 7, line 67. The test system employs a transmitter, a single antenna to transmit and receive, and a receiver including a demodulator and a signal processor for determining the electrical characteristics of the resonant circuit. Rubin, col. 3, lines 42-52, col. 6, lines 34-39. The test system may sweep the frequency of the interrogation signal (*e.g.*, linear step-wise, sinusoidal or random patterns). Rubin, col. 5, lines 5-16, col. 6, lines 40-46. Like the prior art, Rubin teaches that the transmitter sweeps a narrowband interrogation signal over a range of frequencies. Rubin, col. 1, lines 48-65, col. 2, lines 20-44. In particular, a frequency pattern may be stored in a computer-readable memory, which is used to control a numerically controlled oscillator to create the interrogation signal. Rubin, col. 5, line 5-col. 6, line 33. The numerically controlled oscillator may generate a repeating alternating electrical signal pattern comprising a sequence of RF bursts at a plurality of distinct frequencies, the bursts separated by quiescent periods during which the receiver is activated. Rubin, col. 7, lines 2-6. The duration of the RF bursts may be set to be at least equal to the quotient of a value Q of the resonant circuit divided by the resonant frequency of the tag expressed in radians per second. Rubin, col. 7, lines 11-14. Alternatively, if a shorter burst is employed, a time domain to frequency domain transformation may be used. Rubin, col. 7, lines 20-25.

The presence of the resonant circuit causes a distinctive time varying voltage pattern to form across the antenna as the frequency of the alternating electrical signal applied to the antenna is swept between the lowest and the highest frequency by the numerically controlled oscillator. Rubin, col. 6, lines 40-47. The voltage arising across the antenna is supplied to the receiver which amplifies and then demodulates the voltage via an envelope detector producing a characteristic S-shaped response curve having two peaks indicative of 3dB down of the resonance characteristic of the resonance circuit and having a zero crossing indicative of a center frequency thereof. Rubin, col. 6, lines 47-65.

The EAS system for detecting the presence of a resonant security tag is discussed at col. 8, line 1-col. 9, line 20. The system employs a transmitter, separate transmitting and

receiving antennas, and a receiver. Rubin, col. 8, lines 10-34. Importantly, the receiving antenna is provided for sensing *disturbances* in the electromagnetic field resulting from the presence of the tag. Rubin, col. 8, lines 25-28. Importantly, the receiver operates to detect the *disturbances* in the electromagnetic field and to isolate the *disturbances* from the received alternating electric signal (carrier). Rubin, col. 8, lines 28-30. Signals representative of the detected *disturbances* are analyzed to determine whether the detected *disturbance* is due to the presence of tag (*e.g.*, resonant circuit) or due to some other source. Rubin, col. 8, lines 31-34.

The apparatus for deactivating a security tag is discussed at col. 9, line 21-col. 10, line 11. The apparatus includes a transmitter and a transmitting antenna to establish a first electromagnetic field that interacts with a security tag (*e.g.*, resonant circuit) to deactivate the security tag. Rubin, col. 9, lines 22-54. In particular, the transmitter and transmitting antenna generate sufficient energy to cause components of the security tag to either short or fail to an open circuit. Rubin, col. 9, lines 43-51. Such renders the resonant circuit inoperative.

The apparatus may also include a receiving antenna for sensing *disturbances* in a second electromagnetic field produced by the transmitter and transmitting antenna, and may also include a receiver that receives signals representative of such *disturbances* and that determines the presence of a security tag in the deactivation zone based on those signals. Rubin, col. 9, lines 55-63. The receiving antenna is separate from the transmitting antenna. Id. Generation of the first electromagnetic field to deactivate the tag may be responsive to the determination by the receiver that a security tag is in the deactivation zone. Rubin, col. 9, line63-col. 10, line 10.

In summary, all embodiments of Rubin employ a *narrowband* interrogation signal and the embodiments of Rubin which are directed to *detecting a presence/absence of a tag* in an operational environment employ *two separate antennas* and are responsive to *disturbances of an electromagnetic field*, *rather* than being responsive to a *ring back* or *response signal generated by resonance of the resonant circuit itself.*

Chung is directed to an antenna array for smart RFID tags. Chung, title, abstract. In particular, Chung teaches an antenna array including a plurality of antenna loops disposed about or to define a portal or passageway or other detection region in which the antenna loops transmit and/or receive electromagnetic signals and *through which an object may pass*. Chung, col. 2, lines 1-10, col. 2, line 66-col. 3, line 56, col. 5, line 66-col. 6, line 5; col. 7, lines 4-11; col.

8, lines 7-20, and lines 32-45; col. 9, lines 26-35; col. 10, lines 12-56; col. 13, line 21-col. 14, line 8. Such antenna loops may be arrayed in a rectangular array.

Turning to the claims, amended claim 1 recites, *inter alia*, "a handheld wand having at least three mutually orthogonal transmit/receive antenna elements arranged to individually transmit in respective coordinate directions and to receive any narrowband return signals."

After noting that Blair teaches a movable wand with an interrogation ring and Chung discloses an interrogation antenna with three mutually orthogonal rings, the Office Action summarily concludes that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Blair's wand antenna to include multiple rings so the tags can be detected by the interrogator in multiple direction." Office Action mailed November 17, 2008, page 10. However, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art. MPEP 2145 III (emphasis in original). The mere conclusion that because the references relied upon teach all aspects of the claimed invention were individually known at the time of the invention is *not* sufficient to establish a *prima facie* case of obviousness *without* some *object reason to combine* the teachings of the references. MPEP 2145 IV (emphasis added).

Blair discloses a handheld wand with a *single* transmit/receive antenna element composed of several parallel rings. Blair, col. 5, lines 36-54; col. 8, line 67-col. 9, line 6; and Figure 3. Blair also teaches resonant transponders that have three mutually orthogonal antenna elements. This allows the resonant transponders to be detected *without regard to the orientation of the wand*. Hence, there is *no* reason to modify Blair with the teachings of Chung.

As explained above Chung discloses an antenna array including a plurality of antenna loops disposed about or to define a *portal or passageway* or other detection region in which the antenna loops transmit and/or receive electromagnetic signals and *through which an object may pass*. Chung does *not* teach or suggest a *handheld wand* with separate antenna elements that are arranged orthogonally with respect to one another. Rearrangement of the antenna loops as taught by Chung to form a *handheld wand*, if possible, would render Chung's antenna array *inoperative* for its stated purpose, that is *securing doorways or portals* since it

would no longer be possible for an object to pass through. If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is *no suggestion or motivation* to make the proposed modification. MPEP 2143 V (emphasis added). Further, Chung implements an ESA system, which like Rubin, relies on a *disturbance in a field* created by a transmit antenna, the *disturbance of the field* detected by a receive antenna to detect the presence of a tag. Such contrasts with the *principal of operation* of Blair which detects a *return signal from the resonant tag itself*, which signal is an *image* of the decay of the resonant *tag's own resonance*. If a proposed modification or combination of the prior art would change the principal of operation of the prior art invention being modified, then the teachings of references are not sufficient to render the claims prima facie obvious. MPEP 2143.01 VI.

Amended claim 1 also recites, *inter* alia, "a first electronic circuit coupled to the transmit/receive antenna elements of the handheld wand and configured to cause each of the transmit/receive antenna elements to *emit varying wideband interrogation signals in a round-robin succession*." (Emphasis added.)

The Federal Circuit has held many times that to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

The Federal Circuit has further held many times that the Examiner must provide objective evidence of a motivation for combining the teachings of cited references in the manner claimed. *E.g.*, *In re Sang-Su Lee*, 277 F.3d 1338, 1343; 61 USPQ2d 1430, 1433 (Fed. Cir. 2002) (copy enclosed). Further, "this factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority." Id. at 277 F.3d 1343-1344; 61 USPQ2d 1433.

The recent U.S. Supreme Court case, *KSR Int'l Co. v. Teleflex, Inc.*, does not change the requirement for the Examiner to provide such evidence of motivation. 127 U.S. 1727, 1740-41 (U.S. 2007). The Supreme Court also stated that when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious. Id., citing *United States v. Adams*, 383 U. S. 39, 40 (1966). In addition,

the cited references must support all of the limitations of a claim in order to support a rejection based on obviousness. *In re Thrift and Hemphill*, 298 F.3d 1357, 1366 (Fed. Cir. 2002).

The present application and Blair disclose that the interrogation signal is "wideband," and further disclose that use of the wideband interrogation signal provides fast decay of the interrogation signal and thus is useful in detecting low-Q tags that emit a weak return signal that would otherwise be difficult to differentiate from noise. Blair, col. 5, lines 1-20. Such is in contrast to more conventional approaches that employ high Q tags, tightly tuned transmitters and/or more efficient forward energy interrogation, for example the approach taught by Rubin. U.S. Pat. Publ. 2004/0250819, paragraphs [0067] and [0074] (publication of the present application).

Rubin teaches an electronic article security (EAS) system that requires the transmitter to send an interrogation signal at a predetermined and narrow frequency range, so as to encompass as closely as possible the known center frequency (8.2 MHz or minor variations thereof) of the tags. Rubin, col. 1, lines 48-65. Rubin thus teaches using a narrowband (rather than a wideband) interrogation signal. In fact, Rubin explicitly *teaches against* using a wideband interrogation signal in his system, since a larger bandwidth results in decreased reliability in his system (*e.g.*, increased false positives). Rubin, col. 2, lines 20-44.

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). MPEP 2141.02 VI. The Supreme Court has stated that when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious. *KSR Int'l Co. v. Teleflex, Inc.*, supra, citing *United States v. Adams*, 383 U. S. 39, 40 (1966).

Further, the use of a wideband interrogation signal would change the principal of operation of Rubin. As explained above, Rubin employs a narrowband interrogation signal, and teaches sweeping that signal across a frequency range that is sufficiently wide to encompass the resonant frequency of resonant tags that have been manufactured within some defined manufacturing tolerance. If the proposed modification or combination of the prior art would change the principal of operation of the prior art invention being modified, then the teachings of

the references are not sufficient to render the claims *prima facie* obvious. MPEP 2143 VI, citing *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Moreover, the use of a wideband interrogation signal, which spreads energy out over a larger spectrum of frequencies, instead of the conventional narrowband interrogation signal produces an unexpected result, that is better range. Conventional thinking, such as that of Rubin, is that use of a narrowband interrogation signal focused tightly on the resonant frequency of the tag produces a larger response signal. While such may be true, such also means that the noise level associated with the energy decay cycle of the transmitter is relatively high for a relatively long time, making the response signal difficult to discern. In contrast, Applicants employ a wideband interrogation signal, substantially reducing the noise level and duration, and thereby increasing the ability to detect the weaker response signal sufficiently to more than offset the drop in strength of the response signal associated with the use of a wideband interrogation signal. Thus, Applicants' approach is of spreading energy over a wideband width is counter intuitive.

While similar language (*i.e.*, emit varying wideband interrogation signals *in a round-robin succession*) was previously recited in the dependent claims, the previous Office Actions *failed* to identify *any* reference for teaching such a *round-robin succession* or explain why one of ordinary skill in the art would modify Blair such that the each of the transmit/receive antenna elements would emit varying wideband interrogation signals *in a round-robin succession*. Such identification and explanation are of course necessary to establish a *prima facie* rejection under 35 U.S.C. 103.

Claim 1 further recites, *inter alia*, "a second electronic circuit coupled to the transmit/receive antenna elements of the handheld wand and configured to determine from a receipt of any of the narrowband return signals whether any of the resonant tag elements are present in the work area, wherein a number of transmit and receive cycles of each of the transmit/receive antenna elements are clocked so as to avoid an overlap with a number of transmit and receive cycles of the others ones of the transmit/receive antenna elements." While similar language was previously recited in the dependent claims, the previous Office Actions *failed* to identify *any* reference for such a teaching or explain why one of ordinary skill in the art

would modify Blair, Rubin and/or Chung such that the each of the transmit/receive antenna elements would emit varying wideband interrogation signals in a round-robin succession.

Claims 41, 47 and 55 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Blair in view of Rubin and further in view of U.S. Patent No. 6,349,234 issued to Pauly et al. (hereinafter Pauly).

Pauly is directed to an implantable device with *optical* telemetry. Pauly, title, abstract. Pauly discloses an implanted pacer 106 (*e.g.*, pacemaker) which *optically* communicates with a programmer 110 using a wand 108 via lights and light sensors. Pauly, col. 5, lines 5-52. The light signals may be modulated using various pulse-width modulation (PWM), frequency-shift keying (FSK) or other techniques. Pauly, col. 6, lines 31-45. The Office Action contends that the implanted pacer is a tag. However, a pacer is actually an *active* device with its own on-board discrete power source, and unlike the tag does *not* rely on an external source of power. In contrast to the tag, the pacer is *intentionally implanted in a body* and provides electrical current to an internal portion of the body.

The inappropriateness of the rejection based on Blair, Rubin and Chung has been addressed above. The Office Action relies on Pauly for teaching communications techniques such as pulse-width modulation (PWM) and frequency shift keying (FSK).

As explained above, Pauly is directed to an *implantable* device with *optical* telemetry. In particular, Pauly teaches an *implanted pacer*, which is an *active* device having an on-board discrete power source, and which is intentionally implanted and left inside a patient to provide electrical stimulus to an internal portion of the body. This contrasts with a resonant tag, which is a *passive* device that relies on an external source for power, and which is to be removed from the patient along with the surgical object that is marked by the resonant tag.

The Office Action also fails to note that Pauly employs *optical* communications, *not* RF (e.g., radio or microwave) communications, and fails to explain why a person of ordinary skill in the art addressing the problem of checking for surgical objects *inadvertently left in a body* cavity would look to teachings relating to *optical* communications. Pauly appears to be the result of keyword searching, with the keywords taken from Applicants' claims. Thus selection of Pauly appears to be a classic example of hindsight reconstruction, without taking into account the actual problems being addressed by Applicants or the primary references.

Further, Pauly must be considered in its entirety, including those portions that teach the use of light. Substituting the teachings of Pauly into the device of Blair would render the resulting combination inoperative since surgical objects could not be reliable found using light instead of wireless interrogation signals. If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is *no suggestion or motivation* to make the proposed modification. MPEP 2143 V (emphasis added).

Further the purported combination would change the principal of operation of the prior art invention. For example, the proposed combination employs wireless communications (*e.g.*, RF, microwave) instead of the optical communication taught by Pauly. However *optical* communications is a *principal of operation* of Pauly. Pauly even clearly rejects the use of electromagnetic communications. Pauly, co. 1, lines 47-54. A proposed combination that changes the principal of operation of the reference is *not* a prima facie showing of obvious. MPEP 2143.01 VI.

Claims 42, 48 and 56 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Blair in view of Rubin '562 and further in view of U.S. Patent No. 4,893,118 issued to Lewiner et al. (hereinafter Lewiner).

Lewiner is directed to a device for identification by proximity, in particular a contactless reader that identifies passive electronic badges by inductive coupling for use in locks. Lewiner, title, abstract, col. 2, lines 52-54. The resonant circuit in the electronic badge is tuned to a relatively "high" frequency F (*e.g.*, 100-150kHz). The resonant circuit uses a stored code comprising a sequence of bits at a frequency f, very much less than F, to modulate a voltage of intermediate frequency f_i (*e.g.*, 10 KHz) which is between F and f. Lewiner, col. 3, lines 60-68; col. 4, lines 58-61; col. 5, line 63-col. 6, line 6, col. 6, liens 43-47; abstract. The intermediate frequency f_i is on the order of 5 to 20 times greater than the coding frequency f and on the order of 5 to 20 times less than the frequency F. Lewiner, col. 6, lines 43-45. Importantly, the reader transmits and receives simultaneously. Lewiner, col. 3, lines 41-45; col. 4, lines 9-15.

The inappropriateness of the rejection based on Blair, Rubin and Chung has been addressed above. The Office Action relies on Lewiner as purportedly teaching an interrogator which produces a voltage-modulated signal citing claim 1. The Office Action summarily concludes that it would have been obvious to include the function of producing a voltage

modulated signal as taught by Lewiner since it is purportedly well know in the art that the interrogators are used to transmit an energy signal to power the passive tags.

"A statement that modifications of the prior art to meet the claimed invention would have been "'well within the ordinary skill of the art at the time the claimed invention was made'" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). **">[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396 quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)." MPEP 2143.01 IV (emphasis in original).

Lewiner appears to be directed to *near field inductive coupling* between *closely* spaced inductors, positioned in the interrogator and badge respectively to form an *air transformer*. Lewiner, col. 4, lines 1-15. This contrasts with *far field coupling* commonly referred to as *radiation*, where *antennas* that are spaced relatively far apart communicate via radiation. Thus, the purported combination modifies a principal of operation of Lewiner (*i.e.*, inductive coupling via an air transformer). If the proposed modification or combination of the prior art would change the principal of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. MPEP 2143 VI, citing *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Near field communications and far field communications are distinctly different, the earlier relying on induction while the later relying on radiation of electromagnetic energy. Each has distinctly different operational principals, characteristics and problems. There is no teaching or suggestion that the proposed modified combination would be operable. Nor does the Office Action even recognize the fundamental differences between the two technologies.

Lewiner also clearly states that the reader transmits and receives simultaneously. The Office Action fails to address this teaching or explain how such can possibly be construed consistently with the teachings of Blair which require that transmission of the interrogation signal be stopped to allow the response signals to be discerned over the noise. Nor has the

Office Action explained how the teachings of Lewiner could be construed consistently with specific claim language of the present application (*e.g.*, the second electronic circuit discriminates the narrowband return signals from noise based on a magnitude of a resonance decay that commences *after a turn-off* of at least one of the pulses). Such appears to necessitate ignoring the teachings of Lewiner. However, a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). MPEP 2141.02 VI.

Claim 59 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Blair in view of Rubin '562 and further in view of U.S. Patent No. 5,928,151 issued to Hossack et al. (hereinafter Hossack).

Hossack is directed to an ultrasonic system and method for harmonic imaging in three dimensions. Hossack, title, abstract.

The inappropriateness of the rejection based on Blair, Rubin and Chung has been addressed above. The Office Action relies on Hossack as purportedly teaching "an interrogator (via transmit beamformer 40; see fig. 1) can include a low pass filter such as a Bessel filter 58 (see fig. 2).

Hossack is clearly related to *ultrasound* (*i.e.*, pressure wave transmission in a medium) and completely unrelated to *RF interrogation* (*i.e.*, electromagnetic energy transmission). The mere fact that references can be combined or modified does not render the resultant combination obvious unless **>the results would have been predictable to one of ordinary skill in the art. *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007)("If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. MPEP2143 III.

Hossack employs *ultrasound* while Blair and Rubin employ *electromagnetic radiation*, two fundamentally *different principals of operation*. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). MPEP 2143 VI.

It stretches the bounds of imagination to contend that one skilled in the art of radio communications would look to the field of ultrasound for teachings. Such can only be the result of keyword searching, which employs Applicants' claim limitations to try to piece together a combination from disparate references without regard to the fundamental operational principals of such references and without regard to what one of ordinary skill in the art would actually consider as relevant. Such is a classic example of hindsight reasoning, employing Applicants' claims as a blueprint to pick and chose individual components from various unrelated references. The U.S. Patent Office's classification of Hossack (*i.e.*, 600/443 and 128/916) is further evidence of its lack of relevance to Blair (*i.e.*, 128/899) or Rubin (*i.e.*, 340/572.3, 340/572.1 and 340/572.5) or the present application (*i.e.*, 128/899).

Claims 63 and 64 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Blair in view of Rubin '562 and further in view of U.S. Patent No. 6,633,226 issued to Nyssen (hereinafter Nyssen)

Nysen is directed to a frequency hopping spread spectrum passive acoustic wave identification device. Nysen, title, abstract.

The inappropriateness of the rejection based on Blair, Rubin and Chung has been addressed above. The Office Action relies on Nyssen as purportedly teaching "frequency hopping spread spectrum system for interrogating a passive transponder."

Nysen is clearly related to acoustics (*i.e.*, pressure wave transmission in a medium) and completely unrelated to *RF interrogation* (*i.e.*, electromagnetic energy transmission). The mere fact that references can be combined or modified does not render the resultant combination obvious unless **>the results would have been predictable to one of ordinary skill in the art. *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007)("If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. MPEP2143 III.

Nysen employs *sound* while Blair and Rubin employ *electromagnetic radiation*, two fundamentally *different principals of operation*. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). MPEP 2143 VI.

It stretches the bounds of imagination to contend that one skilled in the art of radio communications would look to the field of acoustics. Such can only be the result of keyword searching, which employs Applicants' claim limitations to try to piece together a combination from disparate references without regard to the fundamental operational principals of such references and without regard to what one of ordinary skill in the art would actually consider as relevant. Such is a classic example of hindsight reasoning, employing Applicants' claims as a blueprint to pick and chose individual components from various unrelated references. The U.S. Patent Office's classification of Nysen (*i.e.*, 340/10.1 and 340/10.3) is further evidence of Nysen's lack of relevance to Blair (*i.e.*, 128/899) or Rubin (*i.e.*, 340/572.3, 340/572.1 and 340/572.5) or the present application (*i.e.*, 128/899).

V. Conclusion

Overall, the cited references do not singly, or in any motivated combination, teach or suggest the claimed features of the embodiments recited in the pending independent claims, and thus such claims are allowable. Because the remaining claims depend from said allowable independent claims, and also because these dependent claims include additional limitations, such dependent claims are likewise allowable. If the undersigned attorney has overlooked a relevant teaching in any of the references, the Examiner is requested to point out specifically where such teaching may be found.

In light of the above amendments and remarks, it is respectfully submitted that all pending claims are allowable. Therefore, it is respectfully requested that the Examiner reconsider this application and timely allow all pending claims. The Examiner is encouraged to contact Mr. Abramonte by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. If the Examiner notes any informalities in the claims, he is encouraged to contact Mr. Abramonte by telephone to expediently correct such informalities.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are believed to be allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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